Schedule B
Claims as the Remain after Amendments in the Response dated March 29, 2004 in Serial No. 10/049,675

Claims 1-21 (Cancelled)

22. (Previously Presented) An electric potential sensor for detecting an electrical potential difference present over a source surface comprising:

(1) a voltage divider network including at one end a pick-up electrode with a face surface having an insulating layer positioned adjacent to said face surface for placement next to a source surface whose electrical field is to be sensed through capacitive coupling

(2) an electrical coupling at the other end of the voltage divider network for connection to another portion of the source surface over which an electrical potential difference exists; and

(3) voltage sensing means for providing a voltage output, said voltage sensing means having an input capacitance that forms a portion of the voltage divider network, the voltage sensing means being connected for measuring the voltage appearing across that portion of the voltage divider network provided by said input capacitance and for providing a voltage output that corresponds to the strength of said electrical potential difference

characterized in that the capacitance that can exist between the source surface and the voltage sensing means is sufficient so that, when the pickup electrode is placed adjacent the source surface, the change in the capacitive coupling between the voltage sensing means and the source surface arising from a change in the separation distance between the pickup electrode and said surface varies insensitively with displacement of the electrode towards or away from the surface whereby, upon variation of the separation

Schedule B
Claims as the Remain after Amendments in the Response dated February 9, 2004 in Serial No. 10/049,675

distance between the source surface and the pick-up electrode, the overall, effective capacitance formed in use between said source surface and the voltage sensing means through the pick-up electrode is such that the change in capacitance is less than 50 percent when subjected to a 0.1 mm increase in said separation distance, and wherein the voltage sensing means has an input resistance that, when combined with the capacitance that can exist between the source surface and the voltage sensing means through the pick-up electrode, provides an RC filter with a low-frequency cut-off of at least 0.05 hertz.

23. (Currently Amended) A sensor as in claim ~~11~~ 22 wherein the voltage output of the voltage sensing means is an unmodulated voltage output that corresponds to the strength of said electrical potential difference.

24. (Currently Amended) A sensor as in claim ~~11~~ 22 wherein the percentage change in capacitance is less than 20% when a 0.1 mm increase in the separation distance occurs.

25. (Original) A sensor as in claim ~~11~~ 22 wherein said insulating layer is of such dimensions as to preclude the electrode from providing a capacitance value of over 40 picoFarads/cm^2.

26. (Original) A sensor as in claim ~~11~~ 22 wherein said insulating layer is of such dimensions as to preclude the electrode from providing a capacitance value of over 20 picoFarads/cm^2.

Schedule B
Claims as the Remain after Amendments in the Response dated February 9, 2004 in Serial No. 10/049,675

27. (Currently Amended) A sensor as in claim ~~11~~ 22 wherein said insulating layer is of such dimensions as to preclude the electrode from providing a capacitance value of over 10 picoFarads/cm^2.

28. (Currently Amended) A sensor as in claim ~~11~~ 22 comprising a series capacitor, positioned within said voltage divider network between said pickup electrode and the voltage sensing means, said series capacitor having a value in picoFarads of less than five times the area of the pick-up electrode in cm^2.

29. (Currently Amended) A sensor as in claim ~~17~~ 28 wherein said series capacitor has a value of between 5 and 40 picoFarads.

30. (Currently Amended) A sensor as in claim ~~11~~ 22 comprising a leakage resistor in parallel with the input capacitance of the voltage sensing means of between 10^{11} and 10^{13} ohms.

31. (Currently Amended) A sensor as in claim ~~11~~ 22 comprising a capacitive coupling for connection to the source surface at the end of the voltage divider network opposite the pick-up electrode.

32. (Currently Amended) A sensor as in claim ~~11~~ 22 comprising a resistive-contact coupling for connection to the source surface at the end of the voltage divider network opposite the pick-up electrode, said resistive contact coupling having a resistance value of 500 k ohms, or less.

33. (Cancelled)

Schedule B
Claims as the Remain after Amendments in the Response dated February 9, 2004 in Serial No. 10/049,675

34. (Currently Amended) A sensor assembly system comprising a first sensor as in Claim ~~[1]~~ 22 and a second sensor as in claim 1 applied at a spaced separation over the source surface, said first and second sensors being connected to a differential amplifier to obtain the difference in the output signals from two locations on the surface with common mode noise rejection.

35. (Currently Amended) A sensor assembly comprising multiple sensors each as in Claim ~~[1]~~ 22 assembled on a carrier to locate the pick-up electrodes of each sensor in a fixed, preformated array.

36. (Currently Amended) A sensor assembly as in Claim ~~[14]~~ 35 wherein the carrier is a piece of clothing that can be readily donned or removed with minimal inconvenience.

37. (Currently Amended) A sensor assembly as in Claim ~~[14]~~ 35 combined with tele-monitoring means.

38. (Previously Presented) A method of sensing an electrical potential difference present over a surface comprising:

(1) presenting a pickup electrode to confront said surface and to establish a capacitive coupling to said surface and receive a signal based upon the electric field emanating therefrom;

(2) applying the signal so received to a voltage divider network which includes at one end the pick-up electrode and at another end an electrical coupling means connected to another portion of the surface over which an

Schedule B
Claims as the Remain after Amendments in the Response dated February 9, 2004 in Serial No. 10/049,675

electrical potential difference exists, there being a high impedance amplifier with an input capacitance connected in series within said voltage divider network, the high impedance amplifier having an input resistance that, when combined with the capacitance that can exist between said surface and the high impedance amplifier through the pick-up electrode, provides an RC filter with a low-frequency cut-off of at least 0.05 hertz;;

(3) maintaining the pickup electrode at a spaced separation from the confronted, field-emanating surface so that the overall effective capacitance between said surface and said amplifier has a value in the region of a plot of capacitance value versus separation distance wherein the percentage change in capacitance is no greater than 50 percent when subjected to a 0.1 mm increase in the separation distance occurring between the pick-up electrode and the confronted surface

whereby a signal is provided to the amplifier to provide an amplifier output voltage that corresponds to the strength of said electrical potential difference, and wherein the capacitive coupling between the field-emanating surface and the amplifier through the pickup electrode varies insensitively with displacement of the electrode away from said surface.

39. (Currently Amended) A method as in claim ~~[17]~~ 38 wherein the percentage change in the capacitance is less than 20% when a 0.1 mm increase in the separation distance occurs.

Schedule B
Claims as the Remain after Amendments in the Response dated February 9, 2004 in Serial No. 10/049,675

40. (Currently Amended) A method as in claim ~~[171]~~ 38 wherein the pickup electrode has a surface confronting face that is provided with an insulative dielectric layer having a thickness such as to preclude the electrode from providing a capacitance value of over 40 picoFarads per centimeter squared.

41. (Currently Amended) A method as in claim ~~[171]~~ 38 wherein the voltage divider network includes a series limiting capacitor between the pickup electrode and the input to the amplifier, the pickup electrode having a value of between 5 and 40 picoFarads.